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IN THE

Supreme Court of the United States

OCTOBER TERM, 1954

No. 541

DANIEL BOGGARDS VINCENT and FOOD PROCESSORS, INC.,
Petitioners,

v.

SUNI-CITRUS PRODUCTS COMPANY,
Respondent.

FOOD PROCESSORS, INC.,
Petitioner,

v.

MINUTE MAID CORPORATION,
Respondent.

DAN B. VINCENT, INC.,
Petitioner,

v.

MINUTE MAID CORPORATION,
Respondent.

PETITIONS FOR WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FIFTH CIRCUIT

PERCIVAL E. BRUNDIDGE,
Attorney for Petitioners,
438 Munsey Building,
Washington 4, D. C.

JOSEPH F. BRUNDIDGE,
Of Counsel for Petitioners,
438 Munsey Building,
Washington 4, D. C.

Press of Byron S. Adams, Washington, D. C.

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PETITIONS FOR WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE FIFTH CIRCUIT

Undersigned counsel on behalf of Daniel B. Vincent, Food Processes, Inc. and Dan B. Vincent, Inc., prays that a Writ of Certiorari issue to review the judgment of the United States Court of Appeals, Fifth Circuit, entered in the above entitled consolidated cases on August 5, 1954; Rehearing denied November 4, 1954.

OPINION BELOW.

The opinion of the United States Court of Appeals, Fifth Circuit, is reported at 215 F. (2d) p. 305.

JURISDICTION.

The judgment of the United States Court of Appeals, 5th Circuit, was entered August 5, 1954. (See Appendix A hereto.) Within the time fixed by said Court a Petition for Rehearing was timely filed. (Printed Petition at end R. Vol. X). Upon consideration said Petition for Rehearing was denied, without opinion, November 4, 1954. This Petition is filed well within 90 days following November 4, 1954. The jurisdiction of this Court is invoked under 28 U. S. C., 2101(c).

QUESTIONS PRESENTED.

1. Have petitioners been denied due process of law and a fair trial in the trial Court and was it error for the Court of Appeals not to have considered and passed upon the gross irregularities in conduct and procedure leading up to the adoption by the trial judge of findings of fact prepared by respondents' counsel without notice thereof to petitioners?
2. Did the Court of Appeals in affirming the decrees of the trial court apply the proper criteria of invention in determining the validity of the patents in suit?
3. Was it error for the Court of Appeals to sustain as binding on it such trial court's findings that the patents in suit were anticipated by the prior art?
4. Was it further error for the Court of Appeals, relying on such findings, to have found contrary to the disclosures of the patents and the evidence that the patents in suit "do no more than record and claim a mere natural reaction and result"?

5. In following the erroneous and improperly adopted finding of the trial court, did the Court of Appeals err in holding that the patents in suit failed to meet the standards of invention?

6. Did the Court of Appeals, based on such erroneous findings, err in holding that the inventions of the patents in suit were obvious to those skilled in the art in the face of the conclusive proofs that all persons who sought to solve the problem were chemists who were unsuccessful in solving it prior to Vincent the patentee of the patents in suit?

STATEMENT.

1. Denial of Due Process of Law.

These patent infringement cases, consolidated for trial in the District Court and on appeal to the Fifth Circuit, present to the Supreme Court *inter alia* an unparalleled travesty on justice. At the opening of the trial of these cases on June 4, 1951, the trial judge announced, over objection, that he would only devote four (4) days to the trial of the cases. (R. Vol. I, pp. 497-8). At the end of the fourth day,—June 7, 1951, after hearing two witnesses for respondents—Mr. Cocke, President of Suni-Citrus (R. Vol. I, p. 507) and Dr. Roy, respondents' expert, (Vol. I, p. 615) in the presentation of respondents' *prime facie* case, and three of petitioners' witnesses—Prof. Geer, expert, (Vol. II, p. 920) Kesterson to identify a vial of citrus waste glucoside, and Dr. Neal (Vol. II, p. 980) as to the alleged prior Suni-Citrus process use, the Court suspended the trial in open court and ordered all further testimony taken by deposition out of the presence of the trial judge.

At that time on June 7, 1951, the further open court hearings were continued to December 10, 1951, (Vol. IX, p. 4724) and limited to expert testimony. When the trial was resumed in open court in December, 1951, three witnesses,—Heid, expert for respondents (Vol. IX, p. 4725) and Palmer (Vol. IX, p. 4809) and Reibert, (Vol. IX, p.

4856) for petitioners, were heard by the trial judge and the proofs closed. Thus of a total of 67 witnesses, 22 called by petitioners and 45 by respondents, the trial judge saw and heard only 8 witnesses. In the interim between June 7 and December 10, 1951, as ordered by the trial judge, the testimony of 31 witnesses was taken by deposition out of the presence and hearing of the trial judge. All of these 31 depositions, plus the depositions of 28 witnesses before trial, or a total of 59 depositions, were offered in evidence as exhibits.

Of the 31 witnesses who gave out of court depositions, between June 7, 1951 and December 10, 1951, 30 of them were residents of the trial district and would have appeared and testified in open Court except for the refusal of the trial judge to hear them. These resident witnesses included Mr. Vincent, the patentee, his expert, Dr. Cotton, and other of petitioners' witnesses, as well as 23 witnesses for respondents. (Vol. I, p. 498).

After oral argument in late March, 1952, the decisions of the cases were taken under advisement. Following argument the trial judge announced that his current assignments would preoccupy him for 30 days or until late April, after which he would examine the record and render his decision. That the Trial Judge intended to decide who should prevail is shown at R. Vol. IX, p. 4855:

> MR. EDRINGTON: What about suggested findings we would like to make to the Court? That is most helpful to the Court, sir.
>
> THE COURT: I do not understand that will be in order or necessary until the Court determines who should prevail in this action.

On May 28, 1952, about 30 days after the court said that it could begin the examination of the record, comprising 9282 typewritten pages of testimony, of which only 10% was that of witnesses heard by the court, and a large mass of documentary exhibits, without determining who should prevail, the trial judge adopted as his own on the day and

at the time filed (R. Vol. I, p. 396) 63 typewritten legal size sheets of findings prepared by patent counsel for respondents and at the same time entered the final decrees from which appeals were taken to the U. S. Court of Appeals for the 5th Circuit.

The first error asserted on appeal was the trial judge's unorthodox and irregular procedure in making his findings. (See Court of Appeals Decision pp. 12-13). In considering this error by the trial court, the Court of Appeals set forth respondents' answer to petitioners' assertions, but it did not pass upon or decide that issue, although the record shows the following undisputed facts:

After taking the case under advisement, contrary to his statement above quoted, the trial judge rendered no oral decision from the bench in open Court, nor did he file a written opinion indicating which of the parties was in his opinion right and should prevail and his reasons therefor. Prior to May 28, 1952, respondents had filed a brief, but had not filed any suggested findings. The question arises: How did respondents know that the trial judge contemplated deciding favorably to them on each and every one of the multitudinous defenses pleaded warranting preparation of findings of fact sustaining each and every one of them?

Petitioners were given no notice whatsoever relative to the findings prepared and submitted by respondents. The first notice thereof reached them after May 28, 1952,—that is some time after the day on which the findings and decrees were filed by respondents and signed by the trial judge. The conclusion is inevitable that the trial judge must have communicated his intentions to counsel for respondents privately and in secret without any notice to petitioners and without affording to petitioners an opportunity to be heard in opposition to such suggested findings by respondents. Had petitioners had such notice they could have readily shown to the trial judge that most of relevant findings were unsupported by the evidence warranting their rejection;

that many of the facts material to a due consideration of the cases were omitted from the findings.

This Court, therefore, is asked to decide whether the failure of the Court of Appeals to pass upon this serious procedural question was error and whether, under such circumstances, petitioners have been afforded a fair trial of these causes of action and denied due process of law.

Under the Rules of Civil Procedure it is the universal custom for a trial judge taking a case under advisement to decide it either orally from the bench or by written opinion. As is the adopted practice, when there is a decision without findings of fact, the trial Court orders the prevailing party to file with the Court, within a fixed time and on notice to the opposing party, proposed findings of fact in consonance with the Court's opinion. This notice requirement means that a copy of the proposed findings is served on the opponent thus affording to him the opportunity of excepting thereto and citing the record to support his objections.

No such procedure was followed in this case. The failure of the Court of Appeals to disapprove of this high handed method of fact findings in the trial Court will inevitably result in the trial courts' continuance of these improper modes of procedure, contrary to letter and spirit of the law and justice.

We concede that in a complicated case, and more so as here where three infringement suits involving 3 patents are consolidated for trial and a voluminous record ensues, that the Court has the right to openly call on the prevailing party to submit findings in consonance with the trial court's opinion or decision, but the Supreme Court and the Appellate Court should not subscribe to a procedure in which this is accomplished *sub rosa* without notice to the opponents.

This mode of procedure is particularly objectionable and offends justice where, as here, the findings covering 51 printed pages (R. Vol. I, pp. 199-250) are signed the day they were tendered privately to the trial judge, evidencing

a complete lack of opportunity to read them through, much less check them against the record with which, as to at least 90% thereof, he was totally unfamiliar.

Of more than passing interest and well known to the Court of Appeals is the fact that the depositions of 5 witnesses referred to specifically in findings 34 and 43 (R. Vol. I, pp. 218 and 233) could not have been considered or read by the trial court since at the time the record was designated for appeal and as they first appeared in the record as filed in the Court of Appeals the envelopes containing these depositions were sealed and in the same condition as received in the mail by the Clerk of the trial Court from the Notary taking the depositions. It required an order from the Court of Appeals to its Clerk to open these envelopes so these depositions, at respondents' request, could be printed as part of the appeal record. (See Certificate of Clerk, Court of Appeals, Printed as an Appendix to this Petition).

In *Matton, etc.* v. *The Dynamic,* 123 F. (2d) 999, 1001, and repeated in *U. S.* v. *Forness,* 125 F. (2d) 928, 942, cert. den. 316 U. S. 694, in stressing the grave importance of accurate fact finding, it was said that findings of fact should represent the trial judge's own determination and not the long, often argumentative statements of successful counsel, and that the better practice is to file findings with the opinion and permit the parties to file objections rather than to mechanically adopt findings prepared by the successful litigant.

Notwithstanding that on the appeal petitioners pointed out in detail that many of the findings were mere gratuitous statements of counsel, totally without support in the record, and that others were distortions of the facts which petitioners had no opportunity to correct below, and the failure of the Trial Court to include others material to a proper decision of the cases, the Court of Appeals disregarded all this. It imparted to the illegally adopted, erroneous and inadequate findings unwarranted finality and conclusive-

ness resulting in the erroneous affirmance of the decrees of the trial Court.

That it may adequately consider *inter partes* this miscarriage of justice, this Court should grant certiorari herein. Rule 52 of the Rules of Civil Procedure never contemplated *sub rosa* communications between a trial judge and one of the litigants prior to a decision of a submitted case. Such future abhorrent practices in the Federal District Court, countenanced by the Court of Appeals, can only be rectified and prevented by a decision of the Supreme Court in this case.

2. Legal Issues Presented by Erroneous Decision of Court of Appeals in Applying the Proper Criteria of Invention Are of substantial National Importance.

A principal legal issue presented by these cases is whether or not the courts below have, in holding petitioners' patents invalid for lack of invention over the prior art, "applied the proper criteria of invention". That certiorari may properly be granted for the resolution of this issue was established by this court in *Great Atlantic & Pacific Tea Company* v. *Supermarket Equipment Corporation*, 340 U. S. 147; 87 U. S. P. Q. 303, hereinafter referred to as "The A & P Case". This issue is one of very substantial national importance, since the standard applied in the present case is typical of that now being generally applied by the U. S. District Courts and the Courts of Appeal, and the application of this standard has resulted in the substantial nullification of the patent law by the Federal Courts. In 1952, for instance, the Courts of Appeal held 32 patents invalid as against 3 patents valid and infringed. This spot check by petitioners' counsel does not include decisions holding against patentee solely on grounds other than invalidity, such as non-infringement. Another survey reported in Fortune Magazine for December, 1954, page 198, and covering a single circuit reports that the Court of Appeals for the Second Circuit decided 37 out of 38 patent cases reported from 1948 through 1953 adversely to the patentees.

That there has been in recent years substantial departure from prior policy is attested by the many decisions commenting upon it which have appeared during the past few years.[1]

This shift in judicial policy has impaled the Patent Office upon the horns of a dilemma. It must either conform to the standard of invention now indicated as proper by the courts and curtail the grant of patents by at least 90%, or continue to grant patents in accordance with its own best judgment and thereby create an unsavory situation in which the Government encourages the inventor with one hand to make his invention public at considerable personal expense, by offering him patent protection, and then reneges on its contract by grabbing the patent away from him with the other hand in more than 90% of the cases in which it has become valuable. While adoption of the second alternative is offensive to the most elementary sense of justice, it will also be appreciated that the Patent Office can scarcely reverse a policy which has existed for more than a century, with the implied approval of Congressional appropriations, and dismiss 90% of its employees, merely on the basis of extrapolations by the lower courts of a single Supreme Court decision (the A & P case) which may well have been intended to lead to no such farreaching result.

Accordingly, if the Supreme Court considers that the standard of invention currently applied by the Courts of Appeal is correct, several representative decisions applying that standard should be reviewed and upheld in order that the Patent Office may have a clear and unequivocal justification for the radical revision of an interpretation of Congressional intent as to patentability which it has fol-

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[1] *Spring-Air* v. *Ragains*, 96 Fed. Supp. 79; *Lenox* v. *Landers*, 188 F. (2d) 744; *Van der Horst* v. *Chromium*, 98 F. Supp. 412; *F. C. Russell Co.* v. *Comfort*, 194 F. (2d) 592; *Trico Products Corp.* v. *Delman Corp.*, 180 F. (2d) 529; *Norris* v. *Ohleen*, 88 U. S. P. Q. 65; *Miller* v. *Tilley*, 178 F. (2d) 526; *Alemite* v. *Jiffy*, 176 F. (2d) 444; *Lebold* v. *Marzall*, 100 F. Supp. 867.

lowed without Congressional objection for more than 50 years.[2]

If, on the other hand, the Courts of Appeal have been unduly sweeping in their interpretation of the *A. & P.* decision, and it is not the intention of this Court to eliminate patents as a significant feature of the American economic system, representative cases involving the standard of invention should be reviewed and reversed in order to avoid further error.

In connection with the adoption of either alternative this Court must face three questions:

(a) The Constitutional Question:

Is this divergence between the standard of invention applied by the courts and that applied by the Patent Office, attributable as stated by Justices Douglas and Black in the *A. & P.* decision to the fact that "The Patent Office, like most administrative agencies has looked with favor upon the opportunity which the exercise of discretion affords to expand its own jurisdiction"? Or, does it on the contrary represent an attempt *by the courts* to expand *their* jurisdiction to the determination of matters upon which the administrative employees of the Patent Office are, on the basis of both training and experience, better qualified to pass? Are not the graduate engineers employed by the Patent Office entitled to have as much deference paid to their decisions on such essentially technical matters as patents as the courts seem ready and willing to accord other administrative agencies made up of "lame duck" poli-

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[2] Patents granted per capita in Year 1900 3.4 per 10,000 population. Patents granted per capita in Fiscal Year 1954 2.4 per 10,000 population. This figure would clearly indicate that the Patent Office has *not* during the past 50 years lowered its standard of invention, or sought to expand its sphere of influence. If its application of that standard, so long adhered to, has not during that period been questioned by Congress, this fact would seem to clearly indicate Congressional acquiescence therein.

ticians having few qualifications for their positions aside from their past political services to the party in power?

Moreover, the grant of patents is an administrative function, the performance of which is entrusted by our constitution to the Executive Department of our Government,—not a judicial function, entrusted to the courts. Judicial interference is accordingly justified only on the basis of the presentation of material evidence not considered by the Patent Office, or when that agency has clearly exceeded its statutory authority. This leads to:

(b) The Statutory Question:

Does the standard of invention now followed by the Federal courts conform to the intent of Congress? This intent has been recently restated in the Patent Act of 1952, which has been cited by the Court of Appeals below in support of its opinion. (Court of Appeals Opinion, pp. 22-24) The commentary on this new law published in Title 35 of the U. S. Code Annotated, indicates at pages 22-23, the belief that "some modification was intended in the direction of moderating the extreme degree of strictness exhibited by a number of judicial opinions over the past dozen or more years, that is, some change of attitude more favorable to patents was hoped for". The commentary goes on to point out that the court decisions have thus far "taken the view that no change was intended". However this may be, there would appear to be a substantial difference between a new idea which is merely "not obvious" (the wording of the new statute) and one which "pushes back the frontiers of chemistry, physics and the like" as specified by Justices Douglas and Black in the *A. & P.* case. Even if construed most unfavorably to inventors this statutory language would scarcely appear to justify the extension of an extreme version of the "unusual or striking consequences" test laid down by the majority of this court for application to mechanical combinations of old elements to all patent cases including those which, like petitioners', in-

volve chemical processes. Consequently, this court should now not only review the extent to which extreme interpretations of its decision in the *A. & P.* case may have departed from the proper standard of invention as understood by the court at the time that decision was made, but should also pass on whether or not that standard still conforms to the intent of Congress in the light of its subsequent legislation having the stated purpose of restating the existing law as understood by Congress.

(c) Finally, There Is the Policy Question:

Be it assumed that the courts have not exceeded their constitutional authority by substituting their judgment as to the proper standard of invention for that of the Patent Office. Assume further that the standard now followed by the Courts of Appeal is within the area permitted by statute. Even so, does the extreme position adopted by the Courts of Appeal within that area represent sound judicial policy in accordance with the national interest?

It is respectfully submitted that the niggardly policy now in effect, restricting the compensation available to inventors, discourages invention itself and will, if long continued, slow the industrial progress of the country, reduce the number of new industries established, and curtail the opportunities offered our young men in both industry and research. It will also tend to strengthen the very monopolies many judges, including those who decided the instant case below, think they are thwarting by striking down the limited "monopoly" involved in a patent.

Since this problem is one of major importance petitioners urgently pray that the court give special attention to the next few pages.

Inventions do not come about because some mental giant sits himself down in a comfortable chair and waits for "a flash of genius". They come because ambitious men expend time and money in intelligently directed research and experiment. This research and experimentation costs

money. The only way in which any man not under contract to a large corporation can hope to benefit by such efforts is by securing a patent. He cannot pay the cost of research out of future profits as a large corporation may, since so soon as he places a good new unpatented item on the market, the large corporation with its cheaper unit costs can adopt this item and undersell the small producer, without compensating him for his research costs. If his chances for securing a valid patent are reduced to the vanishing point, as the courts are now reducing them, independent research is thereby made economically impossible. The result is to entrench the large corporation and free it from effective competition. The present situation, with large numbers of patents granted and few held valid, is ideal for the large corporations. The small company cannot afford the cost of litigation to enforce its patents with the prospects for a favorable result 10 to 1 against it. The patents of large corporations will, however, be respected by other large companies which likewise own patents on a more or less reciprocal basis. The small company which cannot afford the expense of litigation even though it might win, would gain nothing by invalidating the patent of a large corporation for it would thereby merely bring about an open field, and no advantage to compensate for the expense. With research and resulting invention restricted to the large companies, they are also necessarily narrowing their endeavors to lines in which they are interested, and lines of inquiry which might produce new and upsetting results highly beneficial to the public at large are likely to be ignored. This is fine for the big companies, but in the long run stagnating for the country.

Another point about invention not always appreciated by those who have not made a study of the matter is the degree of interdependence between inventions. The man who comes up with a worthwhile idea very seldom conceives it full blown from his own genius. He not only conducts extensive experiments, but he studies the results obtained

by others in related fields, not merely with a view to using their teachings *in toto* if they are applicable to his problem, but also in the hope that he may receive from them some suggestion which he may successfully apply, often in greatly modified form, to his own project. The more numerous the available sources the more fruitful his own research is likely to be. Those engaged in "pure science" use, of course, their scholarly periodicals for this purpose, but the man looking for a practical solution to an immediate problem orders a "search" at the Patent Office. The Patent Office classified collection of U. S. and foreign patents and the Technical Library maintained in connection with them constitute the most important center of technical industrial information in the world today. This information is available gratis to all our citizens, and to foreigners as well. Washington's Patent Attorneys handle hundreds of inquiries for such information daily. It's value is today inestimable. But this value will continue only so long as patents are issued freely and their validity ordinarily sustained, since it costs an applicant money to bring his idea to the Patent Office and only cranks will do it if the prospects for reasonable compensation continue as bleak as they are today. Moreover, many inventions which relate to methods of manufacture rather than to the structure of the finished article can be held as "trade secrets" the possession of which may secure to their inventors a substantial commercial advantage. This was the usual practice for many centuries before the industrial revolution and the Patent System was specifically designed by the British Government to break it up. An extreme example appears to have been the invention of the electric battery in Baghdad at about the time of Christ, mentioned in Gamow's "Birth and Death of the Sun", p. 33.[3] These batteries are believed to have been used for electroplating but were apparently

[3] Viking Press, New York, 1953. Prof. Gamow is Professor of Theoretical Physics of George Washington University and one of America's leading scientists.

kept secret for commercial reasons by a relatively few local families.[4]

Other processes of commercial value were kept secret by certain cities during the Middle Ages, and still others of various guilds of craftsmen. The modern patent system had its origin in England in 1331 when the British crown offered the exclusive right to ply their craft in England to certain Flemish weavers if they would come to England. Like grants were later made to clockmakers from Delft in 1368, and to miners from Bohemia in 1452. In this manner the British government sought to bring to England the most advanced technical skills and knowledge of the day even when that knowledge first flowered in other countries and thus break up the monopolies held by other countries by reason of secret processes. Beginning in 1561 this policy was extended to the granting of patents to the domestic originators of new industries, and by 1700 England had a well established system for encouraging inventors to bring their discoveries to public attention by granting patent protection.

In 1705 Newcomen built the first steam engine put to practical use, thus ushering in the "Industrial Revolution" in England, which preceded by 50 years the corresponding changes in Continental countries, which had at that time no comparable patent systems. The contribution made by the patent system to the industrial primacy attained by England at that time is well recognized. See, for instance, the article headed "Industrial Revolution" in the Encyclopedia Americana[5] which in discussing the political reasons why England took the lead in industry during the period says:

> The political situation in England was such as to ensure domestic tranquility and the security of prop-

[4] It was not until its rediscovery hundreds of years later that this long held secret became available to the public.

[5] Volume 15, 1947 Edition, page 97.

erty rights, which were essential to the development of manufactures. In this connection might be mentioned also the breaking down of the restraints of the guild system and the development of a good system of patent law.

The same article then specifically mentions nine inventions which its author considers of foremost importance in the industrial revolution.

Eight of these are attributed to individuals, and of these 8 it is noteworthy that six were patented. In one of the other cases the invention constituted a development of a previously patented invention and the authorities of that day succumbed to the argument that his device did not amount to invention. In the remaining instance the inventor could not afford to prosecute an application but published his invention after being promised reimbursement by a group of manufacturers,—who then reneged.

The subsequent contribution of the American Patent System to the economic development of this country is discussed at length in the Encyclopedia Americana article on Patents, under the subhead—"The Patent System, an Industrial Foster Parent".[6]

That a high incidence of invalidity is going to discourage the inventors of worthwhile improvements from spending the money required to make their contributions of record in the Patent Office and encourage a policy of secrecy as to new processes and methods of manufacture is believed obvious. And the dangers of any policy which discourages the free interchange of technical information have been graphically illustrated by the problems encountered by the Atomic Energy Commission. Since most of their work does not have immediate commercial value and all of its employees are working for a single employer—the Government, so that there is no conflict of interest, the absence of patent protection in this field does not in itself result in any limitation on the free exchange of information within

[6] Volume 21, 1947 Edition, page 387.

the agency. However, the exigencies of military security have imposed on the various departments within this agency for political reasons a close-to-the-chest policy much like that which the absence of patent protection would impose on the individual firms making up our national economy. The consequences have been described by one of the Commission's nuclear physicists—Dr. Ralph E. Lapp, in Collier's Magazine for July 5, 1952, in an article entitled "Too Many Secrets Spoil the Atom", beginning on page 15 and continued on page 79, as follows:

> It is bad enough to surround any activity with a wall of secrecy, but when the activity itself is criss-crossed into separate subdivisions of secrecy, then you have a situation which defies progress. In the language of security officers, this process is known as "compartmentalization of secret areas".
>
> Our wartime A-Bomb project was strictly compartmented. One can only guess how much this slowed down progress, but there is no doubt that it did. The writer vividly recalls the instance of a secret laboratory to which his staff was forbidden access. Scientists in the laboratory desperately needed special instruments for dealing with radioactivity. To get that word out they had to "bootleg" the information along the scientific grapevine! Only because the barrier was thus breached were we able to save them many months of time by helping to develop those instruments. . . .
>
> A much more important example of the harm caused by these secrecy compartments may be found in the development of atomic missiles, those with atomic bombs as war heads. Due to the Atomic Wall, the people responsible for developing guided missiles were not permitted access to data about A-Bombs. Consequently, for a considerable length of time the atomic project and the missiles project took divergent paths. This situation has now been rectified, but valuable time has been lost.

The policy now followed by our Courts of Appeal does not, of course, legally require the individual manufacturers in this country to adopt a policy of secrecy leading to com-

partmentalization of our industrial system,—it merely makes it financially unrewarding to follow any other policy —a much more effective procedure.

To summarize, the issue of the proper standard of invention involves the questions of whether the courts are exceeding their constitutional authority by substituting their judgment as to the proper standard of invention for that of an administrative agency constitutionally charged with the duty of administering the Patent Statutes *in the absence of any evidence whatever showing that agency to have exceeded its statutory authority;* whether the Patent Office has in fact exceeded its statutory authority; and whether a continuation of the current strict construction of that authority can be justified as sound judicial or public policy in view of the substantial discouragement which it offers to the free interchange of industrial information as to novel technical advances in the manufacturing field?

These are questions which should be finally passed upon by this Court and the instant case is one in which they are clearly raised.

The decision below exemplifies in its initial paragraph the antagonistic attitude towards patents now prevalent in the Federal Courts and this basic attitude has prevented the courts below from giving to petitioners' cases the impartial consideration to which petitioners, like any other citizens, are entitled. The decision below has, moreover, interpreted the standard of invention laid down in the *A. & P.* decision for mechanical combinations as being applicable to petitioners' chemical processes, overturned the considered judgment of the Patent Office as to patentability primarily on the basis of prior art considered by the Patent Office at the time the patent was granted without giving any real weight to the presumption of validity arising from said grant, and construed the Patent Act of 1952 as supporting its position. The case accordingly offers an excellent opportunity for this Court to reexamine and restate its position on each of the major points involved on the "proper standard of invention" issue.

3. The 865 Reissue Patent in Suit.

To show the errors by the Court of Appeals, in holding the patents invalid, requires an explanation of the Vincent patents in suit, the prior art and the advancement in the art discovered by Vincent.

The patents in suit (865, Vol. X, p. 4863, and 363, Vol. X, p. 4875) relate to improvements in methods or processes for the conversion of naturally bitter non-pressable acidic citrus waste into a better and more valuable non-bitter, and highly water absorbent, bulkier, dry cow feed.

The process as disclosed in the specification of the 865 Reissue patent and defined in its claims consists of a series of steps in combination whereby the greatly improved and desired results can be obtained within 5 minutes due entirely to the manner in which the critical and exact amount of alkaline reagents (principally calcium hydroxide, commonly known as slack lime) is added to various types of waste having varying unknown acidities. The 363 improvement patent provided a new and novel method of adding the lime to the waste in combination with entirely new drying steps resulting in a more desirable and valuable dry cow feed than that produced by means of the process of the 865 reissue patent or the prior art.

(a) Citrus Cannery Waste.

Citrus cannery waste is the term applied to rejected or culled unjuiced whole citrus fruit and to the peel, rag (membrane) and seeds of grapefruit, oranges, tangerines and lemons remaining after the extraction of the fruit's juices.

The acidity contents of such waste is as varying as is the variance in acidity of the juices of different types of whole fruit. The acidity of the same type of fruit and its waste will also vary considerably depending upon the season in which the fruit is picked, its state of ripeness or the type of soil in which the trees bearing the fruit are grown.

In its natural state the peel of the juiced fruit contains 80 to 85% water. Colloidal substance in the peel of the

fruit such as glucosides, oils and pectins tenaciously bind and hold the water therein, making it impossible to press out any portion of this high percentage of water by any mechanical means, or to satisfactorily dry it by the mere application of heat.

In the early stages of the citrus industry it was found that cattle would eat citrus waste, but when fed to dairy cows certain ingredients therein embittered their milk. Unsuccessful attempts were made to use the waste as a fertilizer. The disposal of citrus waste presented a costly problem as it spoils quickly and had to be hauled to disposal grounds and buried.

(b) Problems Faced by Vincent.

Prior to the discoveries of Vincent which led to his patents in suit, those working in the art had as their sole aim the conversion of the green unpressible waste into a pressible state so that some of the bound water therein could be removed by mechanical pressing, thus not only rendering it partly water pressible but also lowering the otherwise prohibitive cost involved in previous attempts to dry the waste without treatment. To accomplish pressibility the workers in the art had discovered that alkaline reagents, principally slacked lime, (calcium hydroxide) when applied to the waste and allowed to react therein for long periods of time, would convert the waste from a non-pressible to a pressible state. However, the prior art processes left much to be desired. To secure pressibility all of the prior processes, except that of Cole & Hall later discussed, overlooked entirely that the varying acidities of the waste required varying amounts of lime for its proper treatment, by specifying the addition to the waste of predetermined insufficient amounts of lime stated as a percentage of the weight of the waste. Because the amount of lime used was invariably insufficient, resort was had to long ageing or reaction periods to bring about a pressible state in the thus treated waste. The application of a fixed

amount of insufficient lime and its required long reaction on the waste to attain pressibility had the following highly undesirable results:

(1) The specified percentage of lime based on the weight of the waste was insufficient to neutralize and render alkaline any part of the acidic waste.

(2) The required long reaction period or ageing permitted such insufficient lime as was added to convert the pectins in the waste into large quantities of calcium pectate which, in course of the long reaction or ageing step the calcium pectate so formed, hardened resulting in a pressible product which was either hard and wood-like or fibrous.

(3) On drying the ensuing presscake the finished dry feed was brittle, lacked bulkiness and the large quantities of hardened calcium pectate therein was non-water absorbent.

(4) The processes were long and discontinuous.

(c) What Vincent Did.

It was to improve the dry cattle feed of the prior art that Vincent devoted his energies and inventive faculties. What he did, as disclosed in his application for patent filed January 12, 1939, which matured as his original 944 patent, (R. Vol. X, p. 4869) was to make radical, surprising and important improvements in the art and thereby provide a process in which in a short continuous process he could use the lime of the prior art in the treatment of citrus waste but obviate all of the undesirable prior results. By the processes of his patents, contrary to the prior art, Vincent produced a superior dry cattle feed from citrus waste which eliminated all of the prior undesirable features. The dry cow feed produced by the Vincent patent method was,—

(1) Substantially non-bitter,
(2) Fluffier and of greater bulk,

(3) Comparatively free of hard calcium pectate,
(4) Much more water absorbent, and
(5) Produced in a continuous process.

These brought about desirable, but up to then unobtainable, features are attributable solely to Vincent's discovery of a means by which the critical and exact amount of lime could be added to the waste, at the commencement of the processes to bring about a neutralization and desired degree of sufficient alkalinization of the free acidic liquids associated with the waste[7] but insufficient in amount to affect or change the state of the residual acids within the solid peel particles of the waste, without the necessity for pre-determining or knowing the extent of acidity of the particular waste presented in a continuous flow to a citrus waste feed mill for treatment, and thereby bring about with the use of lime in 5 minutes, or by the use of calcium carbonates in 10 to 15 minutes, soft and pulpy pressible solids from which a greater portion of the water originally bound in the waste could be expressed by mechanical means and the ensuing presscake when dried by heat lacked the disadvantages of the dried feed made by the prior art processes.

As a dependable and infallible guide to the addition of the critical amount of lime to meet the unknown varying acidity of the citrus cannery waste presented for treatment and produce the aforementioned desired alkalinity, quick reaction and improved results, the Vincent patents in suit disclose two readily observable changes in the constituents of the waste, both brought about simultaneously, either of which singly or together can be relied upon and used by anyone, including those unskilled in the art, as a guide as to the proper amount of reagent to be used. One is a change in color from the natural yellow-green color of

[7] Free liquids of the waste refers to the acidic fruit juices left in the waste following the juicing operation and contained in whole culled fruit freed by the shredding of the waste.

the acidic liquids of the waste to a brown color and the other is an increase in viscosity of these free liquids forming a brown colored gel.[8] The readily observable change in color to brown and increase in viscosity of the brown liquids of the waste at the very commencement of the process is indicative that the exact required amount of lime to bring about the improved results of the Vincent patents has been employed to meet the unknown acidity of that particular waste.

The observable changes in color and increased viscosity hereinbefore described and disclosed in the patents in suit only take place when lime is added to the waste as specified in the patents in suit. If the amount of lime added be insufficient to alter the acidity of the liquids of the waste to the desired alkaline state, no gel is formed and the 5 minutes reaction does not take place. With the addition of an insufficient amount of lime a pressible state can only be attained by allowing the insufficient amount of lime to react on the waste for inordinate long periods of time in the course of which undesirable hard calcium pectates are formed resulting in hard, woody and fibrous pressible solids and resultant undesirable dry cow feed. If an amount of lime be added to the waste which is in excess of that required to change the color of the liquids of the waste to a brown color and form the brown collapsible gel, such excess will over alkalize all the acids in the waste, will not produce the brown gel and render the waste red in color, malodorous and unfit as a food product.

By controlling the desired amount of lime as will produce the brown color of the liquids, bring about their increased viscosity and form the brown sweet tasting gel, the residual acids in the solid peel particles unaffected by the lime, under later slow agitation following the gel formation, will dissolve and exude or seep out of the solid peel particles and serve as an acidic medium to progressively lower the

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[8] For definition of "gel" see Funk & Wagnall's Dictionary under word "gel".

alkalinity of the gel so that as the overall alkaline state of the waste approaches neutrality or thereby becomes acid again, the gel will collapse or break thus releasing therefrom the waters of the waste occluded in the gel at the time the reaction of the lime makes soluble the glucosides and forms the gel. Upon the gel's collapse there remains a completely new and changed two phased product composed of soft pulpy solids and easily expressible liquids known as press water and referred to in the claims of the reissue patent as "mother liquor".

The pressible solids are soft and pulpy by reason of the fact that the amount of *lime* employed does not remain in contact with the pectins in the waste for more than about 5 minutes during which short time such small amounts of calcium pectate as may form remains soft and water absorbent.

The inventions of the 865 reissue patent in suit provide a truly continuous, quick and greatly improved process omitting the long periods of pre-ascertainment of acidity, ageing, heating and other cumbersome and inadequate treating steps of the prior art processes.

4. The Improvement Patent 383.

Following the grant to him of his 944 original patent on September 24, 1940, Vincent's continued work in the citrus waste processing art brought him to the realization that a better and more valuable dry cattle feed could be produced than that obtainable under the process of his original 944 patent. The application of dry lime in its natural powdery state to the waste had certain disadvantages in that in the attempts to mix the dry lime into the shredded waste particles it did not efficiently reach some of the free acidic liquids held by capillary attraction to each of the shredded particles of the waste.

He further discovered that in the course of drying the presscake by the then currently known and used methods, consuming from 45 minutes to one hour and a half, the

residues of the alkaline material in the presscake continued its undesirable reaction on the pectins in the waste throughout these long drying periods. To shorten the drying time by a more efficient means of drying and thus abort further undesirable reaction, has been found of great importance.

The solution to these two problems was set forth and claimed in the 363 patent (Vol. X, p. 4875, *et seq.*) granted May 24, 1949, on an application therefor filed November 27, 1945, within a year following Vincent's installation of a plant at Tampa, Florida, designed to make use of said improved processes.

The new and improved Vincent method of lime addition of the 363 patent consisted in employing a portion of the acidic press waters piped from under the press to a sump into which, in the condition in which the waste comes from the juicing plant, it falls at the point where it is ready to be treated with lime. On the incoming flowing stream of press waters the dry lime, in such controlled varying amounts as required by the acidity of the liquids of the waste to be treated is introduced resulting in the desired alkalinization of the acidic press waters. The lower end of an inclined chain paddle conveyor functioning to carry the treated waste to the shredders churns up the waste in the mildly alkaline press waters in the sump resulting in coating the entire inner and outer surface of each piece of waste, thereby bringing about a more complete desired neutralization and alkalinization of the free acidic liquids clinging to the surface of the waste. The thus thoroughly coated and treated waste together with a portion of the alkaline press waters in the sump are carried up an elevator and delivered into the shredders. The shredding operation exposes additional acidic coated surfaces of the waste which are treated effectively in the course of shredding by the portion of the alkaline press waters carried up by the elevator with the waste. As in the 944 patent the amount of lime added to alkalize the press waters is that exact amount as bring about the change in color of the liquids of the waste at the very commencement of the process. Following the shred-

ding, the thus treated peel particles are subjected to a two minute quick mixing operation to assure proper reaction of the limed solution in the course of which the viscosity of the liquids increases resulting in formation of the brown gel. As in 944, the residual acids in the peel particles not affected by the lime bath at the commencement of the process exude therefrom under gentle agitation, bringing about the collapse of the gel as first disclosed in 944 resulting in soft pulpy solids and pressible liquids.

The novel drying steps of the 363 patent, result in a completely dried feed in less than 10 minutes. This quick drying prevents, as occurred in the earlier drying procedures, the further formation of hard calcium pectate. By the 363 patent the presscake falling from the presses are dried in a combination of machinery units consisting of a drum drier, an expansion chamber and a cooling reel all operated under a vacuum or subatmospheric pressure. The combination of the new method of treatment and drying results in a superior type of dry cattle food.

The new treating steps of the 363 patent are set out in claim 1 and the drying steps in combination with the treating steps are delineated in claims 8, 9, 10 and 12 of the 363 patent.

In petitioners' brief before the Court of Appeals it was pointed out that the findings of the trial Court (Finding 30, Vol. I, p. 216) were totally erroneous in finding that the only improvement in the 363 patent is the dual addition of lime at two points in the process and in failure to find that such dual or two shot addition of lime was only a preferred method. The 363 patent specification plainly stated in Col. 5, lines 50-63 that—

> If the second liming operation is omitted, as in the case of a temporary shut down of the (second) feeder 12 the (first) feeder 6′ can be operated either by automatic or manual control to deliver a greater quantity of lime sufficient for the entire operation in mixing trough 9, but in this case the operator must watch the color changes more closely and may have to add water

containing weak acid from some operation in the cannery or from the press to correct any excess of alkalinity.

Thus Minute Maid's one shot application of "controlled varying amounts" of lime in the press waters in sump 9 was in exact accordance with the Vincent 363 invention as above quoted. The Court of Appeals, nevertheless, allowed said erroneous findings to stand.

In its opinion, p. 11, footnote 7, the Court of Appeals reproduced certain concessions made by petitioners that some of the treatment steps of the 363 patent were old, but it failed to report what was evidently new as stated in petitioners' brief as follows:

> * * * the crux of the novel and new lime treatment features of the 363 patent as defined in claim 1 of the patent resides—
>
> (1) In the employment before shredding of a lime water bath to thoroughly coat the inner and outer surfaces of the green waste thus obtaining a quicker and more complete desired neutralization of the acidic juices associated with the waste.
>
> (2) In carrying up a portion of the (alkalined) bath water with the treated peel into the shredder where the limed water present in the shredding operation was available to coat the newly exposed portion of the peel resulting from the shredding operation.
>
> (3) In insuring the desired thorough, complete and rapid neutralization of the free acids would take place after the shredding operation by the employment of an efficient quick mixing step thus contributing to the further prevention of the formation of calcium pectate.
>
> (4) Shortening the time during which the lime could react on the waste to prevent the formation of hard, non-water absorbent calcium pectate by the use of limed press water of sufficient lime concentration to neutralize the free acids of the waste but of

insufficient concentration and duration of time to materially react on the pectins of the waste.

None of these steps had ever been employed in combination in the prior art, and all of them, as outlined above, were totally new.

(a) The Court of Appeals Completely Disregarded the Novel and New Combination of Drying Steps of the 363 Patent—Which Alone Was An Important Invention.

No prior art or use was claimed by respondents to anticipate the new drying steps of the 363 patent. Respondents conceded they were new. (See footnote 5 of the Court of Appeals Opinion, p. 1 of Appendix A hereto.) They conceded that the process of the 363 patent produced dry feed with a minimum of fines and was superior in quality to any in the State. It was lighter colored in appearance and definitely of lighter bulk density than the average feed examined. The proofs were, without contradiction, that feed manufactured by the 363 process required the largest bag in the industry to hold the standard 100 pounds of feed and was preferred by buyers over all other feeds. (T. Hughes, Vol. IV, p. 2042).

Notwithstanding all of these proven and admitted advantages of the 363 patent, only granted after Examiners from the Patent Office visited Florida and observed the process in operation, the Court of Appeals following the erroneous findings of the trial judge, held the patent anticipated by the prior art and failed to meet the standards of patentability.

In so deciding the Court of Appeals overlooked entirely the new and admittedly novel drying steps which in themselves as claimed constitute a new drying process and a patentable invention. It overlooked the fact that the 363 process from green peel to dry feed in bags, was completed in the Minute Maid plant in 12 minutes (T. Dr. Roy, Vol. II, p. 620) whereas under the process of the 865 reissue as employed by Suni-Citrus, the process from green peel to dry feed in bags was 42 minutes or more. (T. Vol. VIII, p. 4069).

The advances in the art disclosed and claimed in the 363 patent were surprising, unexpected and unknown in the prior art,—so much so that the majority of feed mills in Florida quickly adopted it *in toto* and put it to use.

If the Court of Appeals is correct in its decision with respect to the 363 patent then it is a foregone conclusion that chemists working on processes which may be of importance to the future welfare and advancement of the arts in medicine and industry can never expect patent protection as a reward for their ingenuity and work.

That the 363 method of drying citrus waste presscake was a decided advance in the art is shown without dispute by the following facts. No one prior to Vincent's 363 patent had given any consideration to the continued reaction of lime on the presscake in the drying thereof. The old lengthy open drum drying methods were used until Vincent came along and lighted the way to a novel and more desirable subatmospheric drying method resulting in a quicker and better drying method and the production of a superior dry cow feed that commanded top prices and was preferred to those feeds dried by the old methods. The industry has reaped the benefit of Vincent's inventorship without reward or recognition to him. That is contrary to the very aims and purposes of our patent system.

5. The Court of Appeals Erred in Holding the Patents in Suit Anticipated by the Prior Art Patents.

As reported in the decision of the Court of Appeals at pp. 18 and 19,[9] (215 F. (2d) at pp. 313-314) it was petitioners' contentions that Vincent's inventions reside in his combining old and new steps to bring about new and improved results; that he was the first to make available to the citrus waste industry an efficient and commercially feasible "continuous process" teaching the application of "controlled varying amounts" of lime dependent upon the dif-

[9] See Appendix A hereto.

ferent acidities of the waste to be treated, the addition of the amount of lime (to secure a desired state of alkalinity) being controlled by observing the color changes in the waste and the formation of a different colored "gel" formed.

The opinion of the Court of Appeals following the illegal and erroneous findings of the trial court, then stated:

> The use of a "continuous process" is old. It is shown in the Cole & Hall, the Cocke and Lissauer patents; and the use of "controlled (and) varying amounts" of lime is old as also revealed by Cole & Hall, Lissauer and Neal.
>
> Finally, Vincent's claimed novel method of controlling the addition of lime, through use of the human senses of sight, feel, smell and taste of the treated waste is not original with him, but has been used extensively practically ever since man began to use lime.—18

By footnote 18 of the Court of Appeals' decision there are cited under "Color", "Touch", "Feel", "Smell" and "Taste" certain specific lines of the prior art patents said by the Court of Appeals to show the *"addition of lime to citrus waste"* by means of the human senses was old.

(a) No Prior Art Patent Teaches Use of Senses as Means of Adding Lime to Citrus Waste.

In its petition for a rehearing [10] pp. 2 to 15, petitioners in the Court of Appeals reproduced the lines of the prior patents cited by the Court and pointedly called the Court's attention to the fact that the Vincent patents in suit in his method of controlling and varying the amount of lime required to bring about the results of his process did not rely on "touch or feel", "smell", or "taste" as respondents' brief contended; that the processes of the Vincent patents in controlling and varying the critical amounts of lime re-

[10] Printed copy whereof is part of the record and to be found at the rear of R. Vol. X.

quired to neutralize and bring about the desired alkaline state of the unknown varying acidities of the free superficial liquids in the waste at the commencement of the process relied solely and only on the readily observable change in color from greenish-yellow of the liquids of the natural waste to a brown color and the observation of a simultaneous increase in viscosity of the alkalized liquids forming a brown gel of short duration with a reaction time, for the forming and collapse or reversion of the gel into a watery liquid, measured in minutes not to exceed 15 minutes. With the use of lime as specified by Vincent's original 944 patent and his 865 reissue the reaction period for the change in color, the forming of the gel and its collapse was about 5 minutes, whereas with other quicker or slower reacting alkaline materials the reaction time was *2 minutes with ammonia* and from *10 to 15 minutes with calcium carbonates* (limestone, oyster shell flour and chalk).

It would serve no useful purpose and only prolong this petition to repeat here what was said to the Court of Appeals in petitioners' application for rehearing. Suffice is it to say that as reproduced meticulously in the Petition for Rehearing the very cited disclosures of the prior art patents clearly indicate that any reference to the employment of the human senses was in relation to the product at the end of those prior art patent processes and not to any means employed to determine or ascertain the correct amount of lime to be added to the unknown varying acidities of the waste at the very commencement of the process for bringing about a desired state of alkalinity, to effectively treat it.

We pointed out to the Court of Appeals with precision and detail in our petition for rehearing that the pinpointed lines of the prior art patents cited by the Court were copied verbatim by it from respondents' brief and the errors committed in accepting them as proof that the prior art anticipated. Notwithstanding these obvious errors, the Court of Appeals denied the rehearing without reasons and without corrections of its decision.

(b) The Cited Prior Art Teaches No Truly Continuous Process Adaptable to Commercial Use.

On the raised question of error in holding that the Cole & Hall, Cocke and Lissauer patents teach a truly feasible continuous process adaptable to commercial use, petitioners' application for rehearing at pp. 15 to 24, cited pertinent portions of the disclosures of these prior art patents which conclusively showed that the combination of steps therein disclosed was such that those processes could not be continuous in the sense of "continuous" as were the processes of the Vincent patents.

(c) No Prior Patent Employed "Controlled Varying Amounts" of Reagents.

At pp. 24 to 29 of the petition for rehearing the errors committed by the Court of Appeals in holding that the use of "controlled varying amounts" of lime was old were pointed out. The patents which the Court erroneously found to teach this step of the Vincent patents are referred to in detail and it was shown therein that the prior art patents cited did not disclose or suggest the use of controlled varying amounts of lime as disclosed and claimed by the Vincent patents to neutralize and obtain the desired degree of alkalinity of the acidic liquids of the waste.

It would seem that the Court of Appeals was so swayed by the illegally adopted and erroneous findings that the patents in suit were anticipated; disclosed and claimed a mere natural reaction and result or so failed to meet the standards of invention or, because held anticipated below, disclosed processes which were obvious to persons skilled in the art, that it was not warranted in recalling its opinion and correcting these obvious errors. Or, it may be that the Court of Appeals did not wish to admit that it had been misled and duped by adopting gratuitous and unsupported claims of respondents made in their brief.

Whatever was the Court's reason for denying the rehearing without assignment of reasons, it is clearly apparent that its decision in this case is wrong and should be

reversed on the questions of anticipation, as this Court will find so clearly pointed out at length in petitioners' application for rehearing. *U. S.* v. *Gypsum Co.*, 333 U. S. 364, 397; *U. S.* v. *Yellow Cab Co.*, 338 U. S. 338, 339.

It is equally clear that if the patents are novel and new as the Patent Office found after full consideration of the very prior art patents relied upon here to show lack of novelty, then the Vincent inventions were not obvious to persons skilled in the art. All the workers in the art were graduate chemists, except Vincent, yet they could not successfully solve the problem which Vincent did and which had been of such benefit to the citrus industry. Their failure to use the Cole & Hall process, their abandonment of the Neal and Lissauer processes no sooner than the 944 patent issued, and their further preference for and the use of the improved 363 Vincent patent process, are strong indications of the patentability of the inventions of the patents in suit, all of which the Court of Appeals disregarded because not included in the erroneous and improperly adopted findings of the trial judge.

The Court of Appeals in deciding the cases without any proof of record preferred to accept gratuitous statements in respondents' brief that the Vincent process was no more than the mere dumping of lime on citrus waste and no more than what had been done for years when lime was thrown in privies. That this was error see Petition for Rehearing, pp. 38-40, end of R. Vol. X.

6. Further Errors of the Court of Appeals.

In its decision affirming the District Court, the Court of Appeals because it erroneously found the patents anticipated further erroneously found the patents invalid on several grounds.

Contrary to the evidence it held that the inventions of the patents in suit—

(a) "• • • do no more than record and claim a mere natural reaction or result";

(b) because anticipated by the prior art patents—

(i) they lacked the standard of patentability and
(ii) the inventions thereof were obvious to persons skilled in the art.

(a) The Patents in Suit Do Not Record and Claim a Mere Natural Reaction and Result as Held by the Court of Appeals.

The pronouncement of the Court of Appeals that the patents in suit "do no more than record and claim a mere natural reaction or result" would be correct only if the trial court's finding supported by the evidence disclosed that the quick reactions and resulting soft and pulpy pressible solids of the Vincent inventions were attainable by the use of indiscriminate amounts of lime thereby producing its ordinary and known effect as a reagent without the intervention of man. Not only is there no such evidence or finding but the record evidence is to the contrary.

Aside from the legal presumption that the patents in suit (particularly since they were subjected to close scrutiny in the *inter-partes* Patent Office Interference Proceedings and in the prosecution of the application therefor in which the Patent Office had before it and considered the pertinent prior art relied on here as anticipations) are valid and will operate successfully and produce the improved results intended, the testimony of respondents' experts and the processes of the alleged prior art patents show conclusively that the patents in suit do more than record and claim a mere natural reaction or result.

Following his admission that citrus waste contains glucosides, a colloidal substance, and that the reaction of lime on the glucosides will bring about the color changes first understood, disclosed and put to use by the Vincent patent, Dr. Roy, Research Director for Minute Maid and expert for respondents, at Vol. II, p. 623 testified on direct as follows:

BY MR. TOULMIN:

Q. Now, Doctor, this color change, do you tell the Court whether that is an act of the nature of the ma-

terials or is it due to some extraneous action that is produced from man? What is the situation? A. If a flavenome glucoside [11] is made alkaline it will change color.

From this answer of respondents' expert it follows that if lime is added to citrus cannery waste containing glucosides having an unknown extent of acidity and the amount of such reagent is insufficient to neutralize and render alkaline the acidic glucosides therein, the color change does not take place. When such changes do take place it is evident that such change is solely attributable to "some extraneous action * * * produced by man" and this color change is not the result of a natural reaction—as held to the contrary by the Court of Appeals.

Another of respondents' witnesses, Mr. Cole, a chemist, testified as follows at Vol. X, p. 5420-21:

Direct Examination.

By Mr. Crafts: (Counsel for Respondents p. 5412)—

Q. In observing reports of the men who were under your direction and control have you ever had occasion to observe any change in color upon the addition of alkali or alkaline earth materials to pectase substance on citrus waste materials? A. Oh, yes, on many occasions.

Q. What happened? A. In handling of citrus products and waste materials it has long been observed that because of products of organic coloring materials in the rinds of these fruits, a change of pH [12] of the medium is accompanied by a change in color, the degree of color becoming more intense as the acidity is reduced, becoming very much darkened when reaching the state of alkalinity.

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[11] Glucoside is an acidic colloidal constituent of citrus waste contributing to its non-pressibility in its natural state.

[12] Change from acidity to alkalinity measurable by an electronic device known as a pH meter.

This corroborates Dr. Roy's previously quoted testimony that man's control of the amount of lime produces the color changes first disclosed and put to use advantageously by Vincent in his patents. At a date not established, Cole may have observed this color change in cases when he may have added sufficient alkaline reagent to bring about an alkaline state in the waste, but he disclosed nowhere in his patent (Cole & Hall Patent Vol. X, p. 4900) the advantageous use thereof in determining the critical amount of lime to add to citrus waste to bring about a desired state of alkalinity in the waste and its conversion into an improved cow feed.

Mr. Heid, citrus chemist and expert witness for respondents, with respect to the employment of color changes as an advantageous means of determining the correct amount of lime to be added to citrus waste with unknown varying acidities to secure a desired alkalinity testified as follows in Vol. I, at pp. 493-94:

* * * *

> Q. And you think it reasonably might be naringin that effects the color change in citrus peel? A. Yes, sir, and glucosides.
>
> Q. Naringin is one of them? A. Yes, sir. It is a glucoside.
>
> Q. Then, if the addition of lime to citrus peel that contained naringin produced a color change, that color change might be the guide for the addition of the proper amount of lime, might it not? A. I would think so.

* * * *

To better understand the foregoing proofs it may be well to explain how acidic solutions can, by man, be rendered alkaline to a desired degree.

Solutions that are acidic contain a preponderance of hydrogen ions whereas those that are alkaline contain a preponderance of hydroxyl ions. When these two types of ions are totally absent or equal or in balance, a solution is natural. The hydroxyl ions in alkaline reagent such as lime are known as electrolytes. When electrolytes are added to acidic solutions in such amounts that the hydroxyl

ions predominate an acidic solution is rendered alkaline. The extent of desired alkalinity is governed by the amount of electrolytes introduced into an acid solution to make it alkaline.

Aside from the cited testimony of respondents' experts, the alleged anticipating prior art patents are irrefutable evidence that the addition of lime regulated by the color change disclosed first by Vincent is produced by man and not a mere natural reaction and result. For instance, the Cole & Hall prior art patent (Vol. X, p. 4894) did not use lime as a reagent to neutralize and render alkaline any portion of the waste. Lime was added in minute amounts to citrus waste to create the proper environment for the successful reaction of non-alkaline enzymes[13] later added to the waste and relied upon to produce a pressible product. As disclosed, the Cole & Hall process steps were as follows (R. Vol. X, p. 4898, l. 38, L. C.):

By laboratory methods from a sample of the waste, its acidity was accurately determined. A calculation was then made to determine the amount of lime which added to the waste would lower its ascertained total acidity content to about .3% acidity. After the addition of enzymes the thus treated acidic waste had to be heated and aged for long periods of time to make it pressible. Cole & Hall did not suggest or require a desired alkaline reaction but on the contrary warned against it, for when the pH of their waste was 7.5 alkaline, just above 7 neutral, their product was malodorous and unfit for a food product. (Cole & Hall Patent, R. Vol. X, pp. 4896, Lines 71-75, R. C.; p. 4897, Lines 1-2, L. C.)

Neal, (Neal Patent, Vol. X, p. 4890) without giving any consideration to the varying acidities of citrus waste, invariably added to the waste a predetermined 6 pounds of reagent to a ton of waste, or 3% of the weight of the waste in lime. This predetermined specified amount of lime, as

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[13] A substance residing in leguminous plants such as alfalfa and clover. It is not an alkaline reagent.

Neal pre-application test reports show (Vol. X, pp. 5085-97; T. Neal, Vol. IX, pp. 4659-4669) could not have been sufficient to render alkaline the acidic glucosides in the free liquids of highly acidic grapefruit waste, used in his tests for in said test reports as in his patent, he noted no color change, got no five minute reaction with lime as does Vincent; but on the contrary, Neal found and required in his patent application based on said tests including tests made with calcium oxide, that the ageing of the .3% lime treated waste for from 2 to 3 hours, or preferably over night, was necessary to obtain a pressible product.

The only requirement of the patent to Lissauer (Vol. X, p. 4904) was the addition of lime within a range of .3% to .5% based on the weight of a "certain grade of grapefruit." His patent does not suggest or require that the waste, its liquids or any part of it be rendered alkaline. He reported no change in color which strongly indicates that the acidic liquids of that "certain grade of grapefruit" were not neutralized and rendered alkaline by his specified amount of lime. Lissauer's avowed purpose was to harden the pectins in the waste. He, as did the other prior art workers, attained this hardening by subjecting his lime treated waste to long reaction times. (Trial Court's Finding 15, R. Vol. I, p. 205, Line 11.)

The early patent to Maercker (R. Vol. X, p. 4885) used lime from 2% to 5% of the weight of pectinous sugar beet refuse. He does not suggest that the amount of lime added was to be that amount as would neutralize and render alkaline any portion of the waste. It so happens that sugar beet refuse contains no acidic glucosides and oils. The only constitutent common to it and citrus waste are pectins. (T. Respondents' Witness Cocke, Vol. II, p. 535).

None of the prior patents got the quick result obtained by Vincent's methods. In the course of time they obtained a pressible product of sorts which was undesirable and different from that obtained by Vincent. The addition of lime as taught by the prior art brought about a hard, woody or fibrous pressible solid. Vincent's method resulted in a

soft pulpy pressible solid, the very opposite of the lime processes of the prior art. This is convincing proof that Vincent's mode of lime use was (1) different, (2) was solely attributable to his method of lime application and relatively quick reaction periods, (3) which was not a mere natural reaction or result.

In chemistry all reaction when put in motion by man may be said to be natural reactions. If the Court of Appeals is correct in its decision of this case, then no valid patent can be obtained for a process involving a chemical reaction. The great work of our chemists in the medical and industrial fields have been justly rewarded by the grant of patents. If the decision of the Court of Appeals stands none of these patents is valid for in every instance their methods or processes involve natural reactions which could not have occurred except that the inventor discovered a means of setting them in motion.

Claim 7 of the Reissue Patent 865 reads as follows:

> 7. The method of preparing a substantially non-bitter and edible products from citrus waste material which includes the steps of adding to the material controlled varying amounts of a non-toxic alkaline earth metal hydroxide to neutralize the free citric acids of the waste as evidenced by the formation of a brown colored minutes-stable transient gel, breaking the said gel in the presence of an acidic medium provided by the residual acids of the waste to form a light brown watery mother liquor and lighter colored pulpy solids, and separating said solids and mother liquor.

It will be noted that the combination of steps necessary to result in a substantially non-bitter edible product are—

(a) Adding to the waste *"controlled varying amounts"* of non-toxic alkaline earth metal hydroxide (lime).

(b) to neutralize the free citric acids of the waste.

(c) as evidenced by a brown colored minutes stable transient gel.

(d) breaking the said gel in the presence of an acidic medium provided by the residual acids of the waste.

(e) to form a light brown watery mother liquor.

(f) and brighter colored *pulpy solids.*

(g) and separating said solids and mother liquor.

In carrying out these combinations of steps is the intervention of man required? Clearly the addition of lime to citrus was an act of man. To control and vary the amount of lime necessary to neutralize the unknown varying free acids of the waste and secure the desired alkalinity of the liquids of the waste can only be put into motion by acts of man, and is not a natural function. It took man's observation of the change in color and the formation of the gel as the means of determining the critical amount of lime required, to secure the desired alkalinity of the liquids of the waste but of insufficient alkalinity to affect the residual acids in the peel and thereby avoid turning the waste red, malodorous and unfit as a food product.

The meaning of "free citric acids of the waste" in the claims is made clear by the 944 and 865 patent specifications which says that the free acids of the waste or those acids in the free liquids of the natural waste—as contradistinguished from those acids bound up and within the cells of the waste, later referred to as the acidic medium of the claims.

In copying disclosures and claims of the issued 944 patent for interference purposes in the Patent Office, Neal's assignee Lissauer, a chemist and a person skilled in the art, on November 20, 1940, after he had seen and read the issued 944 patent, understood "to neutralize the free citric acids of the waste" to mean the bringing about of "superficial alkalinity of the solution". A solution is a liquid. (See Neal's Application, Amendment "G", Vol. X, p. 5432).

The brown gel produced by Vincent's mode of adding lime does not come about naturally. It only comes about

when that amount of lime added is sufficient to neutralize and bring about the desired alkalinity of the acids in the free liquids of the waste and bring about the change in color and the formation of the claimed differently colored gel. The evidence discloses without dispute that shortly after the critical amount of lime is added just sufficient to neutralize and render alkaline the liquids of the waste to the desired degree, *i.e.*, pH of 9 to 10, the change to brown in color will take place (T. Heid, Vol. IX, pp. 4777-79) and the liquids of the waste will register a pH of 9 to 10 (T. Dr. Roy, Vol. II, pp. 648-49) indicating mid-high alkalinity productive of the increase in viscosity of the liquids, a colloidal sol. None of these reactions will take place if too little lime is added and the state of acidity of the liquids of the waste is not made alkaline. If too much lime is added the too high alkalinity produced will not form a gel, will turn the waste a red color and impart to it an offensive odor making the waste unfit as a food product. (T. Dr. Roy, R. Vol. II, p. 671).

The patentee, Vincent, has never claimed to be the inventor of the alkaline reagents. What is claimed is their use when arranged in the process; that is, "the use of one of the agencies of nature for a practical purpose". *Cameron* v. *Saratoga*, 159 Fed. 453, cert. den. 209 U. S. 548, citing *Locomotive Works* v. *Medart*, 158 U. S. 77 and the *Bell Telephone Case*, 126 U. S. 1.

The Court of Appeals in support of its decision that the patents in suit "do no more than record and claim a mere natural reaction or result" and invalid "because they fail to meet the standards of patentable invention" erroneously relied upon the cases listed in footnote 10 of its opinion. None of these decisions of this and the appellate courts cited is pertinent.

For instance:

The *A. & P. Tea Co.* v. *Super Market Corp. Case*, 340 U. S. 147, 152-3, decided that a mechanical contrivance or gadget made up entirely of rearranged old parts, producing no new result, was unpatentable no matter how useful

it may be. This case however, drew the distinction between a combination of old elements in a mechanical gadget on the one hand, and a combination of steps in a chemical process, on the other. This Court made it clear that its rule of decision was inapplicable to a process involving chemical reactions bringing about an improved result.

In *Funk Bros. Seed Co.* v. *Kalo Inoculant Co.*, 333 U. S. 127, the patent there at issue did nothing more than combine a number of well known inoculants. The combination became useful for treating at will a number of plants one of which was ordinarily activiated only by one of the combined inoculants. Each of the combined inoculants performed in exactly the same manner as when it was segregated and used alone in the treatment of a specific kind of plant. The Court properly held lack of invention because the patentee had discovered no new manufacture or a new means of using a product of nature to secure a new reaction or improved result.

In *Sinclair & Carroll Co.* v. *Interchemical Co.*, 325 U. S. 327, this Court held the Gessler patent for quick drying ink unpatentable. In making his ink Gessler simply took from a catalog and combined certain ingredients whose properties were well known. It was found that any one skilled in the art using these well known ingredients could have produced the Gessler ink.

In the case at bar, Vincent did with lime on citrus waste what no one before him succeeding in doing. He used it in such a manner as to produce such a quick reaction that soft and pulpy pressible solids resulted, while those in the prior art using insufficient lime to produce alkalinity required long reaction periods and thus, in a discontinuous process, got nothing but a hard and fibrous pressible product. Vincent secured a quick reaction readily adaptable to a continuous process by discovering a new means by which he could unfailingly determine the exact and critical amount of lime necessary for a quick reaction thus eliminating long reaction or ageing periods and avoiding the hardening of the pectous substances in the waste. He did not merely add

lime in indiscriminate amounts. He discovered, as the prior art did not, that waste with varying acidities could not be treated successfully with predetermined amounts of lime based on the weight of the waste; that the amount of lime had to be used in such amount as would convert only the unknown acid state of the liquids of the waste to a desired sufficiently alkaline state. These discoveries were invention of the highest order which fully meet the standards adopted by this Court. The Court of Appeals erred in not so finding.

(b) The Vincent Patents in Suit Do Not Disclose and Claim Adding Lime to Obtain a Natural Reaction of Gels of Different Periods of Existence.

In connection with the holding by the Court of Appeals that "the use of controlled and varying amounts of lime is old" in footnote 17, page 19 of its opinion, it was said:

> [17] In addition to being old as revealed by the prior art, we think there was no patentable novelty in Vincent's idea of merely adding "controlled and varying amounts" of lime in order to obtain the natural reaction or results of "gels" of different periods of existence. See *Fiberjoint Corp.* v. *W. R. Meadows,* 112 F. (2d) 322, 324-25; *Finley* v. *MacDougald Const. Co.,* 5th Cir., 28 F. (2d) 674-5.

In so deciding the Court of Appeals erred in that—

In the addition of lime to citrus waste to secure desired alkalinity the control by color and formation of the increased viscosity, the gel does not come into being or result as a natural reaction. Lime so added to the liquids of the waste does not form gels of different periods of existence. With the use of lime the entire process time from the moment the lime is added until the waste is in a pressible state is 5 minutes. The patentee gets his soft and pulpy pressible product within that 5 minutes only because of Vincent's control of the amount of lime and his varying the amount added to the waste to meet the varying unknown acidity of the free liquids of that waste presented for treat-

ment to produce a desired alkalinity thereof. With the use of other stronger or weaker reagents the total process time is 2 minutes for ammonia and from 10 to 15 minutes for calcium carbonates. More or less time may be consumed in the reaction of the type of reagents employed which may be stronger or weaker than lime in bringing about an increase in viscosity of the liquid sol and forming the gel, but the collapse of the gel by the acidic medium is accomplished in each instance in approximately the same time. Any variation in gel collapse time is dependent upon the rate of release and progressive lowering of the alkaline state by the residual acids in the peel particles not primarily affected by the reagent when first applied by Vincent's mode to the waste.

Moreover, the cases cited to support footnote 17 are not pertinent to the Vincent patents when the processes thereof are properly construed.

In the cited *Fiberjoint Corp.* v. *Meadows* case (112 F. (2d) 322) the invention there considered and held to lack invention related to a method of impregnating wood and other porous materials with resins and crude petrolatum dissolved in gasoline, the latter acting as a carrier to convey the petrolatum and resins into the pores of the material to be impregnated. With the evaporation of the gasoline after impregnation the resin and petrolatum remain in the pores of the material impregnated thereby waterproofing it. If one desired a stronger solution of resin and petrolatum less gasoline solvent should be used and a weaker solution would result by the use of more gasoline. In holding that the patent lacked invention the Court said:

> * * * Certainly there was no discovery in suddenly realizing that a solution of a substance and a solvent might be made thicker or thinner by the use of more of the substance or less than the solvent * * * or that the saturation of a porous substance in a perfect solution of elements would distribute that solution evenly throughout the pores. * * * These facts have been known for time immemorial * * *.

The Vincent processes were not the mere addition of any amount of lime within the top and bottom amounts stated in his patents. His processes worked and brought about improved results only because he discovered a means by which the exact and critical amount of lime could be determined as required to change the unknown acidic state of the liquid portion of a waste to just that desired alkalinity as would produce at the end of the quick reaction soft and pulpy pressible solids and avoid the undesirable hard, woody and fibrous pressible solids of the prior art.

In the *Finlay* v. *MacDougald* case (28 F. (2d) 674) cited by the Court the patent there considered did no more than require the use of more asphalt than theretofore used in the construction of the shoulder or outside edge portions of paved roads.

In holding that the patent lacked invention the Court said:

> To add more of an ingredient for the purpose of increasing its ordinary and known effect could never be invention. * * * Where surprising and unexpected results are achieved, as has sometimes happened in the alloying of metals, or the treatment of disease by drugs, it might be otherwise.

The Vincent patents fall squarely within the exceptions mentioned by the Court as above quoted.

Chemists have known for years how to make acid solutions alkaline by the use of alkaline materials. By the old method of titration or the more recent use of a pH meter reading from 0 to 7 the concentration of hydrogen ions and extent of acidity of a solution can be determined and a calculation therefrom can be made to determine what amount of lime or other reagent would produce a state of desired alkalinity in any range from 7 to 14 on pH meter scale. That was not the problem solved by Vincent. He wished to avoid all this predetermination of acidity so that without the necessity of knowing the extent of the varying acidity of the citrus waste presented for treatment to be

able to unerringly add just that exact amount of lime as would produce in a waste having varying unknown acidity a desired state of alkalinity in the free acidic liquids of the waste but insufficient to effect the residual acids in the peel particles and thereby get a 5 minute reaction and avoid the long lime reactions, the undesirable pressible product of the prior art, and a more valuable dry food. That is not the mere addition of more or less lime for the purpose of increasing or decreasing its ordinary and known effect.

Thus the Court of Appeals again seriously erred in imparting to the Vincent inventions a mere natural reaction and result.

7. The Vincent Patents Meet the Standards of Patentability.

The Court of Appeals in following the erroneous and inadequate findings of the trial court fell into error in applying the standards of invention. It erred in not considering the standard of patentability of an invention as dictated by the decisions of this Court and the various Courts of Appeal following it, wherein the rule laid down is that the more fact that an invention has been generally adopted and the product therefrom has been improved over that which has been disclosed before is very weighty evidence that what has been discovered and invented was new, useful and evidence of patentability. *Eibel Case,* 261 U. S. 45, 56, 57; *Minerals Separation* v. *Hyde,* 242 U. S. 261, 270.

The Court of Appeals, without any other evidence to the contrary, disregarded the evidence of Mr. Hughes, (Vol. IV, pp. 1988-2029; 2026-2041) that from his visit to all citrus waste feed mills in Florida and intimate knowledge of the Vincent processes, (R. Vol. IV, pp. 2060-61) all were making use of the Vincent processes by employing his method of adding lime by means of change in color to brown and formation of the brown gel and that the feeds made by the Vincent processes were far superior to those made by the abandoned prior art Neal and Lissauer proc-

esses, the only prior processes actually once used in Florida or California.

The Court of Appeals refused to accept the convincing uncontradicted proofs of record that no sooner did the 944 Vincent patent issue, the Neal process, requiring ageing bins and 2 to 3 hours or longer ageing, and the Lissauer process requiring the indispensible pre-soaking of the waste for 5 minutes in a 190° to 205° steam or water to rid the waste of soluble pectins and in which Neal and Lissauer added an insufficient amount of lime to alter the acidity of the waste or any part of it, were abandoned and the Vincent process adopted in their stead.

These facts material to the decision of the question of patentability were disregarded by the trial courts findings as prepared by respondents' counsel and equally disregarded by the Court of Appeals. Both courts below preferred to accept without any proofs of record the gratuitous statements of respondents' counsel in their brief that the Vincent inventions were no more than dumping lime on citrus waste and was no more than that which had been done for years when lime was thrown in open privies on a farm. That this is absurd see Petitioners' Application for Rehearing with the Court of Appeals, pp. 38-40, rear of R. Vol. X).

The Court of Appeals need not have been solicitious for respondents, for validating the Vincent patents will not impose a monopoly on the citrus cannery waste processors, for all they have to do to avoid infringement of the Vincent patents is to revert to doing just exactly what they were doing prior to the grant of the 944 patent and resume the use of the Neal and Lissauer processes.

If, as respondents claim, the Vincent patents do no more than what has been in the public domain for years,—the simple addition of lime to citrus waste,—then they need only to add such predetermined and constant amount of lime that they may desire and so set and lock their varying lime control devices on their lime feeders so that they can-

not be varied and then age sufficiently the treated waste to secure pressibility. By this prior formerly used process they will not infringe the patents in suit.

8. It Was Error to Hold That Abandonment of Prior Patent Applications Which Did Not Solve the Problem Was Indicative of Inherent Lack of Patentability of the Patent in Suit Which Did Solve the Problem.

The abandonment by a patentee of prior pending applications for patent which do not solve the problem should not have been held as indicative of the unpatentability of an invention in a later application which does solve the problem.

Petitioners find it unnecessary to disagree with the Court of Appeals that the "asserted novelty" of the earlier 1936 (R. Vol. X, p. 5465 *et seq.*) and 1937 (R. Vol. X, p. 5441, *et seq.*) Vincent patent applications were, as the Court of Appeals stated, to "avoiding the formation of any gel" for we can with assurance say that the abandoned 1936 and 1937 Vincent applications contained no disclosures of (1) a method of adding "controlled varying amounts of lime", (2) any use of a change in color and formation of a gel in determining that amount of lime required to neutralize the free acidic liquids of the waste at the commencement of the process, (3) the formation of a gel of any kind much less a brown colored minutes stable transient gel stable for a matter of minutes, not exceeding 15 minutes; (4) the collapse of the gel by any means or (5) the production of soft and pulpy pressible solids. Those disclosures simply were entirely lacking from these earlier applications for patents. (See Decision Patent Office, Vol. X, p. 5042). The Patent Office properly disallowed any claims thereunder. (R. Vol. X, pp. 5457-59; 5474-75). The 1936 application did not even suggest the use of lime. The 1937 application which did mention lime was filed in an attempt to overcome the rejection of submitted claims by the Patent Office over the cited Cole & Hall patent in which in an entirely different and non-analogous process the Cole & Hall patent dis-

closed the use of an enzyme, not an alkaline reagent, for the formation after much delay, heating and standing of a non-transient and permanent gel which did not collapse by chemical reaction but was broken up into small gel particles by a mechanical beating action. The Cole & Hall patent required the use of heat as essential steps of their process. It required tedious ascertainment of the actual overall acidity of each batch of the waste and the addition of lime simply to lower the ascertained acidity, not to neutralize any acidity in the waste and render it alkaline to an optimum or desired degree.

9. Vincent Did Not Apply for Reissue of His 944 Patent to Avoid Neal's Invention, Nor Was the Reissue Based on Additional Disclosures as Erroneously Found by the Court of Appeals.

In a suit brought by Vincent in 1941 for infringement of his 944 patent, (R. Vol. X, p. 5006) a defense filed thereto in April 1946 urged that that patent was invalid as claiming more than disclosed. (R. Vol. X, p. 4995). This caused Vincent to re-examine his 944 patent and on advice of his patent solicitor he applied for reissue. The purpose of the reissue was to narrow the claims and secure to Mr. Vincent his invention as he first intended to claim it.

The specification of his 944 patent disclosed the addition of lime and other alkaline reagents to citrus waste "in varying proportions" but none of the 944 patent claims included the limitation "varying". In describing the method of addition of his specified reagents it was disclosed by the 944 patent that—

> • • • It is necessary to add sufficient reagents • • • *to insure alkalinity of the reaction at the commencement thereof.* Stated briefly, my invention contemplates the treatment of citrus waste in a definite alkaline solution preferably in the presence of a Group II metal compound, so as to foster the formation of a gel which is subsequently broken in an acid reaction medium." (Emphasis supplied). (944 Patent, R. Vol. X, p. 4871, 1st col., lines 68-71).

In the examples of the 944 patent (same page) it was disclosed that these various reagents reacted on the particular grapefruit waste employed within different times in changing color to brown and in forming the gel referred to as an increase in viscosity, and the subsequent collapse or reversion of the gel to a liquid state.

For instance, in Example 1 of the 944 patent it is disclosed that when *lime* was used with such grapefruit waste in sufficient amount to bring about a brown color, and the increase in viscosity (the formation of the gel) the entire processing resulting in spongy pressible solids, was completed in about 5 minutes.

In Example 2 employing the same grapefruit waste as in Example 1 using calcium carbonates (limestone, oyster-shell flour or chalk) the reaction was the same but was completed in from about 10 to 15 minutes.

In Example 3, employing the same grapefruit as in Examples 1 and 2, using calcium carbonate and ammonia in an amount necessary to change the color of the liquids to brown, the reaction took place in two minutes.

To describe these short reaction times of from 2 to 15 minutes, for the forming and collapsing of the gel, the patentee in his 944 patent claims chose the phraseology "transient gel" to indicate that the gel was not a permanent gel but one made and broken in a short reaction period of time measured in minutes, *i.e.*, 2 to 15 minutes.

To provoke an interference between the Neal pending application for patent and the Vincent issued 944 patent, Dr. Wayne M. Neal's assignees on November 20, 1940, following the issue of the Vincent 944 patent, filed Amendment "G" to the Neal pending application in which said assignees adopted certain disclosures of the Vincent 944 patent and copied verbatim six of the Vincent issued patent claims. Following the declaration of interference an *inter partes* proceeding was had in which the patentee Vincent was vis-a-vis the applicants Neal and Finley, the Board of Interference Examiners of the Patent Office on Oc-

tober 31, 1944, following argument and briefs, decided *inter alia* that Vincent's patent disclosed and claimed the formation of a gel "of short duration" with "a reaction time measured in minutes" while the Neal application disclosed a required reaction time of from "2 to 3 hours preferably overnight". As to Neal's contention that his process formed a gel inherently, the Patent Office found and decided (1) that inherency could not be claimed in the face of lack of disclosure of the formation of a gel of any kind in the Neal application and (2) even if a gel was inherently formed, due to Neal's long required 2 to 3 hours for reaction to secure a pressible product his alleged claimed inherent gel could not be the "transient gel" of the claims of the Vincent 944 patent. (See Decision of the Patent Office, R. Vol. X, pp. 5009, 5018, 5021, 5026).

With this factual bakground it is more readily understood why Vincent applied for a reissue of his 944 patent when its claims were attacked in the District Court in 1946 as broader than the disclosure. If the terminology "transient gel" of the claims of 944 is construed alone, without resort to the specification disclosures, "transient gel" of the claims might conceivably be interpreted to include a reaction period 2 to 3 hours, the reaction period of Neal. On the other hand, if the specification disclosures of the Vincent 944 patent are resorted to, the "transient gel" of the claims must be interpreted, as did the Patent Office in its decision, as a gel "of short duration" with "a time reaction measured in minutes". Accordingly, the terminology "minutes stable transient gel" allowed by the Patent Office in the claims of the reissue, was merely more accurately descriptive of a gel of short duration with a reaction time measured in minutes, and this new terminology did not change the 944 invention or make it broader than its disclosure, but if anything it narrowed it.

The Court of Appeals following the erroneous, inadequate and improperly adopted findings of the trial Court erred in deciding (pp. 16 and 17 of Original Opinion) that Vincent secured issuance of his 865 reissue patent "mainly

on the basis of the *additional* descriptive phrase "minutes stable" as qualifying the duration of his Original 944 "transient gel" and the *introduction* and emphasis upon the use of the word "varying" to define the controlled amounts of lime used as a reagent.

Vincent did not by his reissue broaden the disclosed invention of his 944 patent by *"additional"* or *"qualifying"* descriptive matter in his reissue, nor did he *"introduce"* any new or changed method in the reissue by the use of the word "varying" as stated by the Court of Appeals.

"Varying" omitted from the claims of 944 is found in the specification of 944 (Vol. X, p. 4871, left column, lines 68-71). Therefore, its employment in the reissue claims was a limitation and no new matter. The use of "minutes stable transient gel" in the reissue claims as more accurately descriptive of the "transient gel" of 944, was suggested to Vincent by the decision of the Patent Office by its Board of Interference Examiners wherein they found that "transient gel" of the 944 issued patent, meant a gel of "short duration" with "a time reaction measured in minutes". The reaction periods of 944 using ammonia as the reagent was two minutes, with lime 5 minutes and calcium carbonates 10 to 15. Thus with any of Vincent's specified reagent the longest reaction time was not more than 15 minutes. Thus "minutes stable transient gel" was merely more accurately descriptive of the life or stability of the disclosed gel formed by the increase of viscosity produced by Vincent's method of adding weaker or stronger alkaline reagents to citrus waste to secure a desired state of alkalinity of the liquids of the waste having normal unknown varying acidities.

Under the reissue statute (35 U. S. C. Sec. 64), as interpreted by the Courts, a patentee is entitled to a reissue to avoid ambiguities in the claims and eliminate the necessity of resorting to the specification for an interpretation thereof, so long as the new terminology of his claims is responsive to the disclosures of the original patent specification and do not broaden them. Such narrowed reissues

are encouraged and can be applied for at any time during the life of the patent. (See Walker on Patents, Deller's Edition, Sec. 320, p. 1364, and cited cases).

All of the defenses urged in this litigation to the reissue were raised by the Examiner in considering the application for Reissue and disposed of favorably to the applicant prior to grant of the Reissue. In granting the reissue the Patent Office must have found that the failure to claim in the first instance "controlled varying amounts" of lime and "minutes stable transient gel" arose by inadvertence, accident or mistake without fraudulent or deceptive intention; that the changed suggested phraseology of the claims was warranted by the disclosures of the 944 patent and narrowed the claims of the reissue. The grant of the reissue was a question primarily for the Patent Office. *Van Kannel* v. *Winton Hotel*, 276 Fed. 234, 238. It was validly granted and the Court of Appeals erred in not so deciding.

10. In Following the Trial Court's Illegally Adopted Findings That Neal's Alleged Prior Use of Calcium Oxide Resulted in a "15-30 Minutes Stable Gel", Was Erroneous.

At p. 10 of its opinion as amplified in footnote 6, the Court of Appeals, contrary to the evidence, followed the trial court's illegally adopted and erroneous findings to the effect that the Patent Office overlooked or disregarded Neal's testimony given in 1943 after the grant of the Vincent 944 patent in the Interference Proceeding. From this testimony (See Clerk's Supplemental Certificate at Rear of Vol. X, Printed in the Appendix Hereto) in which he only claimed orally in 1943 that in his pre-application test in July and early August 1935, not placed in his patent application filed later in August, 1935, or in his Amendment "G" filed November 20, 1940, the trial court and the Court of Appeals found that "Neal had obtained a 15-30 'minutes stable gel' thereby anticipating the reaction time and allegedly distinguishable 'transient gel' of the Vincent 944 patent."

As more particularly pointed out in petitioners' petition for rehearing at Section VI, pp. 35-40, and as shown by the reproduced testimony of Neal in the Appendix, Neal did not testify that at any time in any tests or reductions to practice prior to Vincent he formed "a minutes stable gel". If he had so stated in 1943 in his testimony in the interference proceeding such statement coming long after the 944 Vincent patent had issued would have been totally incredible in view of Neal's failure to disclose such quicker reaction in his patent application filed after making the claimed test and because of the further fact that his pre-application test reports in evidence show reaction times all not less than 4 hours or more,—even when he used calcium oxide. (See Respondents' Witness, Neal, Testimony, Vol. IX, pp. 4647-4676).

11. The Patents in Suit Are Not Indefinite as Held by the Court of Appeals.

In its opinion, p. 20, the Court of Appeals said:

> Further, most of this unnecessarily voluminous testimony, prior art, and exhibits, on both the questions of validity and infringement of the patents in suit, can be reduced to the statement that nearly all of the hotly contested issues as to the nature and rigidity of the "gel" formed, its color, duration, and the time of reaction, depend generally on such other variable factors as the kind and amount of lime or other alkaline reagent used, the character and amount of the citrus waste treated, whether means of mechanical agitation are employed, etc. Under such circumstances, appellants are confronted with the same practical difficulty in sustaining and enforcing the patent monopoly they claim as was experienced by the patentee in *Fruit Treating Corp.* v. *Food Machinery Corp., supra*,[14] wherein this Court invalidated somewhat similar claims as too broad, and as failing to set forth a sufficiently definite standard as to the precise nature of the process. • • •

[14] 112 F. (2d) 119, 121.

The Court of Appeals erred in comparing the patents in suit with the patent in the *Fruit Treating Corp.* case.

The Vincent patents in suit meet every requirement of the patent laws. They give detailed examples of what occurs in the use of controlled varying amounts of lime, calcium carbonates, ammonia and other alkaline reagents. In every instance when the reagent is added as directed the change in color and the differently colored gel is produced. The "hotly contested issues" arose when respondents challenged the dictionary definition of a "gel"—the increase in viscosity of a colloidal sol; they denied that in their process they formed a gel, yet not a single witness for respondents ever looked for the "gel" as defined in the dictionary but contented themselves with merely saying they saw no solid jelly such as is jello or jellies obtainable at the grocery store.

The specification of the patent in the *Fruit Treating Case* unlike the specifications in the Vincent patents in suit, contained no examples but merely specified that the invention consisted of a mixture of any dye capable of going into solution or being carried by the solvent. The proportions of the ingredients varied in ratios of from one to fifty percentum by weight of dye, and the evidence and the patent specification in that case showed that no one could use the invention without first ascertaining by repeated experiments the exact proportions of the different ingredients required to bring about the desired results. The claims of the patent were so broad and all inclusive that any process for dyeing oranges that might be desired would necessarily infringe.

This is not the case with the Vincent patents in suit. Any one unskilled in the art using any one of the alkaline reagents enumerated in the examples could succeed in practicing the Vincent inventions without any experimentation. All he had to do, as the patents teach, is start to add the lime or limestone or oystershell flour or chalk or ammonia and gradually increase the amount until he pro-

duced a brown color in the liquids of the waste and the liquids of the waste increased in viscosity and formed the syrupy gel and then stop the addition of lime or other reagent of the patent he had chosen to use. The reaction would then take place within the number of minutes applicable to the patent reagent specified and used.

Thus it will be clearly seen that the Court of Appeals disregarded the detailed explanation of the inventions and unjustly imparted to them an indefiniteness which is totally refuted by the specifications.

Not a single expert for respondents testified that the patents were indefinite or that experimentation would be required in the use of their processes.

CONCLUSION.

For the reasons stated hereinabove as amplified by what petitioners set forth in their petition for rehearing, a Writ of Certiorari should be granted herein to review and correct the clear and substantial errors of the Court of Appeals.

Respectfully submitted,

PRENTICE E. EDRINGTON,
438 Munsey Building,
Washington 4, D. C.,
Attorney for Petitioners.

JOSEPH H. BRISBOIS,
Of Counsel for Petitioners,
438 Munsey Building,
Washington 4, D. C.

Washington, D. C.,
January 12, 1955.